REMARKS:

Claims 1-7, 9-16, 18-25, and 27-30 are currently pending in the subject Application.

Claims 8, 17, and 26 have been previously canceled without *prejudice*.

Claims 1-7, 9-16, 18-25, and 27 stand rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,219,649 to Jameson (hereinafter "*Jameson*") in view of U.S. Patent Publication No. 20020049759 to Christensen (hereinafter "*Christensen*").

Claims 28-30 stand rejected under 35 U.S.C. § 103(a) over *Jameson* in view of *Christensen* and in further view of *Supply Chain Management: Strategy, Planning, and Operation*, Prentice Hall, October 2000, by *Chopra* et al. (hereinafter "*Chopra*").

Applicants note with thanks the Examiner's response of 7 January 2009 and the Advisory Action of 20 March 2009.

Applicants respectfully submit that all of Applicants arguments and amendments are without *prejudice* or *disclaimer*. In addition, Applicants have merely discussed example distinctions from the cited prior art. Other distinctions may exist, and as such, Applicants reserve the right to discuss these additional distinctions in a future Response or on Appeal, if appropriate. Applicants further respectfully submit that by not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner's additional statements. The example distinctions discussed by Applicants are considered sufficient to overcome the Examiner's rejections. In addition, Applicants reserve the right to pursue broader claims in this Application or through a continuation patent application. No new matter has been added.

I.   Rejections Under 35 U.S.C. § 103(a)

Claims 1-7, 9-16, 18-25, and 27 stand rejected under 35 U.S.C. § 103(a) over *Jameson* in view of *Christensen*. Claims 28-30 stand rejected under 35 U.S.C. § 103(a) over *Jameson* in view of *Christensen*, in further view of *Chopra*.

Applicants respectfully submit that Claims 1-7, 9-16, 18-25, and 27-30 contain unique and novel limitations that are not taught, suggested, or even hinted at in *Jameson, Christensen* and *Chopra*, either individually or in combination. Thus, Applicants respectfully traverse the Examiner's obviousness rejection of Claims 1-7, 9-16, 18-25, and 27-30 under 35 U.S.C. § 103(a) over *Jameson, Christensen* and *Chopra,* individually or in combination.

In rejecting Claim 1, the Examiner states:

> Jameson teaches a computer-implemented method for solving a supply chain planning problem (see abstract; where a resource allocation optimization method is disclosed. A resource allocation method is a supply chain planning problem.), comprising:
> decompositioning the supply chain planning problem into a plurality of independent subproblems" (see Jameson column 7 lines 45-54; where the allocation problem is divided in to simpler sub-problems. Resource allocation is a part of supply chain management.), said supply chain planning problem comprising at least one of a demand forecasting planning problem (col.19, lines 1-45, uncertain future demand is a demand forecasting planning problem), a service level planning problem (col. 6, lines 46-61, meeting contractual obligations is a service level planning problem), and a replenishment planning problem" (col. 19, lines 1-45, determining capacity levels over time is a replenishment planning problem),
> "solving each of said plurality of said independent sub-problems by separate processes operating in parallel" (see Jameson column 8 lines 8-25; where the sub-problems are solved to determine the optimal allocation point. Each sub-problem is solved independently. The matrices are stored on individual machines thus allowing the matrices to be stored across several computers. A distributed database is defined as a database that be distributed to several computers.).

(7 January 2009 Final Office Action, Pages 5-6). Applicants respectfully disagree with all of the above and direct the Examiner's attention to column 7, lines 45-54 of the specification of *Jameson*, provided below, on which the Examiner relies:

> Several strategies are used in tandem to cope with the inherent NP-hardness of stochastic programming: clustering, line searching, statistical sampling, and unbiased approximation. Clustering is used to divide the ***allocation problem*** into simpler sub-problems, for which determining optimal allocations is computationally simpler and faster. Optimal allocations for sub-problems are used to define spaces for line-searches; line searches are used for optimizing allocations over ever-larger sub-problems. (Emphasis added).

Applicants respectfully submit that the "allocation problem" disclosed in *Jameson* is not analogous to the "supply chain planning problem" recited in Claim 1. Specifically, Claim 1 requires "***decompositioning the supply chain planning problem into a plurality of independent sub-problems, said supply chain planning problem comprising at least one of a demand forecasting planning problem, a service level planning problem, and a replenishment planning problem.***" Nowhere does *Jameson* disclose a "***demand forecasting planning problem***," a "***service level planning problem***," or a "***replenishment planning problem***." Therefore, because *Jameson* is silent, and thus, fails to disclose, these elements of Applicants' Claim 1, *Jameson* actually teaches away from Applicants' claimed invention.
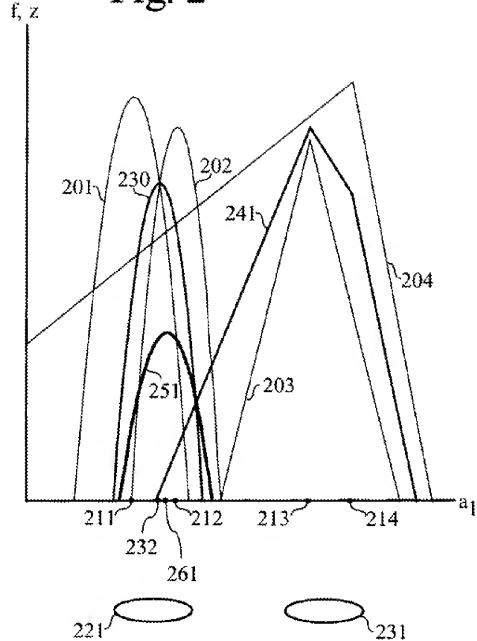
Furthermore, Applicants respectfully submit that portions of *Jameson* on which the Examiner relies, as shown above, also fail to disclose "***decompositioning the supply chain planning problem into a plurality of independent sub-problems***," as recited in Claim 1. By contrast, *Jameson* merely describes clustering to divide an allocation problem into simpler sub-problems. Applicants respectfully submit that the clustering and subsequent division of an allocation problem into simpler sub-problems as disclosed in *Jameson* is not analogous to decompositioning a supply chain planning problem into a plurality of independent sub-problems. For reasons already discussed above, the supply chain planning problem of Claim 1 does not equate to the allocation problem disclosed in *Jameson*. Additionally, the independent sub-problems resulting from the decompositioning of a supply chain planning problem as required by Claim 1 are individual problems that are generated by the decompositioning of the supply chain problem and are not merely simpler portions or sub-problems of a larger allocation problem as disclosed in *Jameson*.

Applicants further respectfully submit that *Jameson* fails to disclose "***solving each of said plurality of said independent sub-problems by each processor of said plurality of processors… wherein each processor of said plurality of processors is operating in parallel***" as required by Claim 1. Applicants respectfully direct the Examiner's attention to column 7, line 66 through column 8, line 25 and Figure 2 of the specification of *Jameson*, provided below, on which the Examiner relies:

FIG. 2 depicts a hypothetical example with four scenarios. The a_1 allocations are shown collapsed into a single dimension on the horizontal axis; the vertical axis shows function f and z values. Curves 201, 202, 203, and 204 show f values as a

function of a_1 for the first, second, third, and fourth scenarios respectively. The optimal a_1 values for the four scenarios are points 211, 212, 213, and 214. Given the four optimal points, they are clustered: points 211 and 212 into a cluster 221; points 213 and 214 into a cluster 231. (The clusters include the scenarios themselves.) The value of z across both the first and second scenarios is shown by curve 230; stated differently, curve 230 shows the probabilistically-weighted average value of curves 201 and 202. The value of z across the third and fourth scenarios by is shown by curve 241. For both clusters, the optimal individual-scenario allocations are good starting points for finding the optimal cluster allocations. Line-search techniques, to be explained shortly, are used to locate a point 232 as the optimal allocation for cluster 221. For cluster 231, however, the third scenario's optimal allocation (point 213) is the best cluster allocation. Now, the iteration repeats: the two cluster allocations points 232 and 213 are clustered into a larger final cluster. The value of z across the four scenarios is shown by curve 251, and as analogous to using optimized scenario allocations, the optimal allocations for the individual clusters serve as starting points for finding the overall optimal allocation, point 261.

Fig. 2

Applicants respectfully submit that the Examiner's interpretation of the above-referenced portion of *Jameson* as disclosing sub-problems being independently solved to determine an optimal allocation point is inaccurate. Rather, as shown above, *Jameson* discloses four scenarios of an allocation problem graphically depicted as functions. The optimal points of the function, 211, 212, 213, 214 are not values that have been arrived at by solving a sub-problem, but rather, are merely optimization points that are graphically depicted on the a_1 axis. *Jameson* is silent, and therefore fails to disclose, any discussion of solving a sub-problem for an optimal point. Rather, as shown above, *Jameson* states that "the optimal individual-scenario allocations are good starting points for finding the optimal cluster allocations. Line-search techniques… are used to locate a point 232 as the optimal allocation cluster." Applicants respectfully submit that merely searching for an optimal cluster allocation from among existing cluster allocations does not equate to *solving independent*

sub-problems as required by Applicants' Claim 1. As such, *Jameson*'s disclosure of a searching technique for locating an optimal allocation cluster actually teaches away from Claim 1, which requires "*solving each of said plurality of said independent sub-problems* by each processor of said plurality of processors… wherein each processor of said plurality of processors is operating in parallel."

As discussed in detail above, *Jameson* fails to disclose at least the limitations of Applicants' Claim1 of "*decompositioning the supply chain planning problem into a plurality of independent sub-problems, said supply chain planning problem comprising at least one of a demand forecasting planning problem, a service level planning problem, and a replenishment planning problem*" and "*solving each of said plurality of said independent sub-problems by each processor of said plurality of processors…wherein each processor of said plurality of processors is operating in parallel*." Neither *Christensen* nor *Chopra* provide the missing teachings. Thus, Applicants respectfully submit that *Jameson*, *Christensen*, and *Chopra* whether taken individually or in combination, fail to render Claim 1 obvious under 35 U.S.C. § 103. Accordingly, Applicants respectfully request that the rejections under 35 U.S.C. § 103 be withdrawn.

II.   **The Office Action Fails to Properly Establish a *Prima Facie* case of Obviousness According to the UPSTO Examination Guidelines**

Applicants respectfully submit that the Office Action fails to properly establish a *prima facie* case of obviousness of Claims 1-7, 9-16, 18-25, and 27-30 over *Jameson, Christensen*, and *Chopra*, either individually or in combination. In particular, the Office Action fails to establish a *prima facie* case of obviousness based on the "Examination Guidelines for Determining Obviousness Under 35 U.S.C. § 103 in View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc*." (the "Guidelines").

As reiterated by the Supreme Court in *KSR International Co. v. Teleflex Inc.* (*KSR*), the framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in G*raham v. John Deere Co*. (383 U.S. 1, 148 USPQ 459 (1966)). Obviousness is a question of law based on underlying factual inquiries. These factual inquiries enunciated by the Court are as follows:

(1) Determining the scope and content of the prior art;

(2) Ascertaining the differences between the claimed invention and the prior art; and

(3) Resolving the level of ordinary skill in the pertinent art.

(Notice, 72 Fed. Reg. 57527 (Oct. 10, 2007)). Objective evidence relevant to the issue of obviousness must be evaluated by Office personnel. (383 U.S. 17–18, 148 USPQ 467 (1966)). As stated by the Supreme Court in *KSR*, ''While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.'' (*KSR*, 550 U.S. at __, 82 USPQ2d at 1391).

However, it is important to note that the Guidelines require that Office personnel "***ensure that the written record includes findings of fact*** concerning the state of the art and the teachings of the references applied. (Notice, 72 Fed. Reg. 57527 (Oct. 10, 2007)). In addition, the Guidelines remind Office personnel that the "***factual findings made by Office personnel are the necessary underpinnings to establish obviousness***." (*id*.). Further, "***Office personnel must provide an explanation to support an obviousness rejection*** under 35 U.S.C. 103. (*id*.). In fact, "35 U.S.C. 132 requires that the applicant be notified of the reasons for the rejection of the claim so that he or she can decide how best to proceed" and "clearly setting forth findings of fact and the rationale(s) to support a rejection in an Office action leads to the prompt resolution of issues pertinent to patentability." (*id*.).

With respect to the subject Application, the Office Action has not shown the ***factual findings necessary to establish obviousness*** or even ***an explanation to support the obviousness rejection*** of Claims 1-7, 9-16, 18-25, and 27-30 based on the proposed combination of *Jameson, Christensen*, and *Chopra*, either individually or in combination. The Office Action merely states that:

> It would have been obvious, at the time of the invention, to one of ordinary skill in the to combine the features of 'providing a plurality of distributed database partitions, each partition of said plurality of distributed database partitions associated with a respective independent data hunks of said supply chain planning problem,' 'operating a plurality of processors in said database, each processor of said plurality of processors associated with a respective partition of said plurality of distributed database partitions,' 'forming a plurality of distributed sub-problem partitions, each of said distributed sub-problem partitions including a plurality of related items,' loading data into a plurality of distributed database partitions, said data associated

with said plurality of related items, and each of said distributed database partitions associated with a respective one of each said distributed sub-problem partitions' taught by *Christensen* to *Jameson* in order to increase the performance of the system, which is a goal of *Christensen.*"

(7 January 2009 Final Office Action, pages 7-8). Applicants respectfully disagree and respectfully submit that the Examiner's conclusory statement is not sufficient to establish the *factual findings necessary to establish obviousness* and is not a sufficient *explanation to support the obviousness rejection* based on the proposed combination of *Jameson* and *Christensen*. *Applicants respectfully request that the Examiner provide proper support for the obviousness rejection under 35 U.S.C. 103 as necessitated by the Guidelines, including the factual findings necessary to establish obviousness to* "*ensure that the written record includes findings of fact concerning the state of the art and the teachings of the references applied*. (Notice, 72 Fed. Reg. 57527 (Oct. 10, 2007)).

The Guidelines further provide guidance to Office personnel in "determining the scope and content of the prior art" such as, for example, "Office personnel must first obtain a thorough understanding of the invention disclosed and claimed in the application." (Notice, 72 Fed. Reg. 57527 (Oct. 10, 2007)). The scope of the claimed invention must be clearly determined by giving the claims the "broadest reasonable interpretation consistent with the specification." (*See* Phillips v. AWH Corp., 415 F.3d 1303, 1316, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005) and MPEP § 2111.). In addition, the Guidelines state that any "*obviousness rejection should include*, either explicitly or implicitly in view of the prior art applied, *an indication of the level of ordinary skill*." (Notice, 72 Fed. Reg. 57528 (Oct. 10, 2007)). With respect to the subject Application, the Office Action has not provided *an indication of the level of ordinary skill*. *Applicants respectfully request that the Examiner provide proper support for the obviousness rejection under 35 U.S.C. 103 as necessitated by the Guidelines, including an indication of the level of ordinary skill, relied upon by the Examiner.* (Notice, 72 Fed. Reg. 57527 (Oct. 10, 2007)).

The Guidelines still further provide that once the *Graham* factual inquiries are resolved, Office personnel must determine whether the claimed invention would have been obvious to one of ordinary skill in the art. (*Id*.). For example, the Guidelines state that *Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art*. (*Id*.). In addition, the Guidelines state that the proper analysis is

whether the claimed invention would have been obvious to one of ordinary skill in the art after consideration of all the facts. (*Id*. and *See* 35 U.S.C. 103(a)).

With respect to the subject Application, the Office Action has not expressly resolved any of the *Graham* factual inquiries to determine whether Applicants invention would have been obvious to one of ordinary skill in the art. In addition, the Office Action fails to *explain whatsoever why the difference(s) between the proposed combination of Jameson* and *Christensen*, **either individually or in combination** *and Applicants claimed invention would have been obvious to one of ordinary skill in the art*. The Office Action merely states that "in order to increase the performance of the system, which is a goal of *Christensen*." (7 January 2009 Final Office Action, pages 7-8). Applicants respectfully disagree and further respectfully request clarification as to how this statement *explains why the difference(s) between the proposed combination of Jameson, Christensen, Chopra, and Applicants claimed invention would have been obvious to one of ordinary skill in the art*. Applicants further respectfully submit that the Examiner is using the subject Application as a template to formulate reconstructive hindsight, which constitutes impermissible use of hindsight under 35 U.S.C. § 103(a).

The Guidelines yet further state that the "key to supporting any rejection under 35 U.S.C. 103 is the *clear articulation of the reason(s) why the claimed invention would have been obvious*." (Notice, 72 Fed. Reg. 57528 (Oct. 10, 2007)). In fact, the Supreme Court in *KSR* noted that "*the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit*." (*id*). The Court quoting *In re Kahn* (441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)), stated that "'[R]ejections on *obviousness cannot be sustained by mere conclusory statements*; instead, there *must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness*.'" (*KSR*, 550 U.S. at __, 82 USPQ2d at 1396). The Guidelines provide the following seven rationales:

(A) Combining prior art elements according to known methods to yield predictable results;
(B) Simple substitution of one known element for another to obtain predictable results;
(C) Use of known technique to improve similar devices (methods, or products) in the same way;
(D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;

(E) ''Obvious to try''—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;

(F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art;

(G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Applicants respectfully submit that the ***Office Action fails to provide any articulation, let alone, clear articulation of the reasons why Applicants claimed invention would have been obvious***. For example, the ***Examiner has not adequately supported the selection and combination of Jameson, Christensen, and Chopra to render obvious Applicants claimed invention***. As clearly shown above, the Examiner's unsupported conclusory statements ***do not adequately provide clear articulation of the reasons why Applicants' claimed invention would have been obvious***. In addition, the Examiner's unsupported conclusory statement fails to meet any of the Guidelines' rationales to render obvious Applicants claimed invention. Thus, if the Examiner continues to maintain the obviousness rejection of Claims 1-7, 9-16, 18-25 and 27 based on the proposed combination of *Jameson and Christensen,* and the rejection of Claims 28-20 based upon the proposed combination of *Jameson, Christensen*, and *Chopra*, ***Applicants respectfully request that the Examiner provide proper support for the obviousness rejection under 35 U.S.C. 103 as necessitated by the Guidelines, including a statement by the Examiner identifying which one of the seven rationales the Examiner is relying on and the proper analysis of that particular rationale, as required by the Guidelines***.

III. Applicants' Claims are Patentable over the proposed *Jameson-Christensen-Chopra* Combination

Applicants respectfully submit that Claim 1 is considered patentably distinguishable over *Jameson* and *Christensen*. This being the case, Claims 9, 10, 18, 19, and 27 are also considered patentably distinguishable over *Jameson* and *Christensen*, for at least the reasons discussed above in connection with Claim 1.

Furthermore, with respect to dependent Claims 2-7, 11-16, 20-25, and 28-30: Claims 2-7 and 28 depend from Claim 1; Claims 11-16 and 29 depend from Claim 10; and Claims 20-25 and 30 depend from Claim 19. As mentioned above, each of Claims 1, 9, 10, 18, 19, and 27 are considered patentably distinguishable over *Jameson, Christensen* and *Chopra*. Thus, dependent Claims 2-7, 11-16, 20-25, and 28-30 are considered to be in condition for allowance for at least the reason of depending from an allowable claim.

For at least the reasons set forth herein, Applicants respectfully submit that Claims 1-7, 9-16, 18-25, and 27-30 are not rendered obvious by *Jameson, Christensen* and *Chopra*. Applicants further respectfully submit that Claims 1-7, 9-16, 18-25, and 27-30 are in condition for allowance. Thus, Applicants respectfully request that the rejection of Claims 1-7, 9-16, 18-25, and 27-30 under 35 U.S.C. § 103(a) be reconsidered and that Claims 1-7, 9-16, 18-25, and 27-30 be allowed.

CONCLUSION:

In view of the foregoing remarks, this application is considered to be in condition for allowance, and early reconsideration and a Notice of Allowance are earnestly solicited.

A Request for Continued Examination (RCE) is being filed electronically herewith to facilitate the processing of this deposit account authorization. *The Director is hereby authorized to charge the $810.00 RCE fee, to Deposit Account No. 500777.* Although the Applicant believes no additional fees are deemed to be necessary; the undersigned hereby authorizes the Director to charge any additional fees which may be required, or credit any overpayments, to *Deposit Account No. 500777.* If an extension of time is necessary for allowing this Response to be timely filed, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) to the extent necessary. Any fee required for such Petition for Extension of Time should be charged to *Deposit Account No. 500777.*

Please link this application to Customer No. 53184 so that its status may be checked via the PAIR System.

Respectfully submitted,

7 April 2009   /Steven J. Laureanti/signed
Date   Steven J. Laureanti, Registration No. 50,274

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